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ABSTRACT

Labor continues to be an important factor in increased productivity. Mounting evidence shows that unionized workers are more productive than nonunionized workers and that unionization increases productivity in an establishment. Technological advances have resulted in jobs that require more technical preparation than a high school diploma or undergraduate degree. Eighteen of 19 jobs need technical training, work experience, or training in a particular skill or group of skills. Organized labor has moved to deal with technological changes through contract provisions and technological change clauses in collective bargaining agreements. A clearly articulated national policy is necessary to help schools keep pace with workers' training needs. Industry needs to develop and expand training programs, such as in-house training, on-the-job training, tuition aid programs, and apprenticeship. Organized labor and vocational education must cooperate to better train workers. Research concerns should include cooperation between vocational education and the apprenticeship system, promotion of sex equity by vocational education, and equal access to vocational education. (Questions and answers are appended.) (YLB)

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Occasional Paper No.89

THE PERSPECTIVE OF ORGANIZED LABOR ON IMPROVING AMERICA'S PRODUCTIVITY

by

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FOREWORD

Organized labor is in a crucial position to affect the directions of America's efforts to improve productivity, particularly as evidence suggests that in many industries and businesses, productivity ratios are still more strongly affected by the skills and efforts of individual workers than they are by technology. It is with great pleasure that the National Center for Research in Vocational Education presents this Occasional Paper by Kenneth R. Edwards, the Director of the Skill Improvement Department of the International Brotherhood of Electrical Workers. His perspectives on organized labor's roles in productivity improvement speak directly to policies and practices in both secondary and postsecondary vocational education.

Ken has been a long-time friend and supporter of the National Center. He was one of the first members of the National Center's Advisory Council, appointed by the Secretary of Education, and he has served as an advisor on many of our research efforts. He is currently on the Board of Directors for the National Association for Trade and Industrial Education and Chairman of the AFL-CIO's Building and Construction Trades and Metal Trades Apprenticeship Committee. Ken received his B.A. in psychology from the University of Mexico where he also pursued some graduate work in adult education. He is well published with over 32 miscellaneous publications on apprenticeship; vocational, adult and career education; and testing. He has received numerous awards and he is particularly commended for the distinguished service awards that he received from three Secretaries of Labor and one Secretary of Health, Education, and Welfare.

In his current capacity as the Director of his union's Skill Improvement Department, Mr. Edwards is in charge of policy relating to apprenticeship, training, vocational and career education, and psychological testing for union members. He also functions as an advisor, curriculum specialist, guidance consultant, and reviewer of training materials, although he does not administer any training programs (those are administered at the local level).

On behalf of The Ohio State University and the National Center for Research in Vocational Education, I am pleased to share with you Kenneth Edwards' presentation entitled, "The Perspective of Organized Labor on Improving America's Productivity."

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

THE PERSPECTIVE OF ORGANIZED LABOR ON IMPROVING AMERICA'S PRODUCTIVITY

One of the most frequently used or overused terms on the American scene today is "productivity." When we Americans attempt to describe our relative position in the world in terms of trade or international exchange, or when we think about our various economic enterprises or sectors, we tend to dwell on one term—productivity.

Doomsday prophets would have us believe that we are not a productive nation and that the United States has reached the limits of possible growth. They attribute certain economic declines to the law of diminishing returns. They point to an ever-increasing population, the decline of natural resources, continuing unemployment, polluted environments, and the lack of production by our industrial sector.

Although at this point in time it may be true that our manufacturing investment stock has not expanded as rapidly as our work force, and that this may have caused a decline in the amount of capital invested per hour of human labor, the United States is still the most productive country in the world (Marshall 1982). Our closest competitor in terms of productivity is the Netherlands, which produces 92 percent of U.S. output per hour, and it is not Germany or Japan, which produce 89 percent and 68 percent respectively.

An Historical Perspective

One hundred years ago our total gross national product (GNP) was approximately $9.2 billion or $190 per individual. In 1979 our GNP was $2.5 trillion or $11,000 per individual, which—if converted to 1879 dollars—would be $400 billion, showing an increase of about 43.5 times over the GNP of 100 years ago.

Over the last one hundred years, we have had a ninefold increase in output per worker. In 1879 our production was running about $450 in goods per worker. In 1979, we were producing $24,000 per worker, which—if converted to 1879 dollars—would be approximately $4,000 per worker. Furthermore, over the last ten years (1969-1979) our output per paid hour worked has increased 12 percent.

We also have had a considerable change in our work force. One hundred years ago the typical American worker was self-employed. He was male, a farmer, and highly independent. Today, the typical American worker is employed by somebody else, is an urban dweller, is as likely to be a woman as a man, and for the most part is highly dependent on other people.

The Contribution of Organized Labor to Productivity

Economist John Kendrick* suggests that while some people believe that labor's contribution to an increase in productivity is no longer significant, labor may be the only factor in the

*As quoted in Froehlich (1981).

classical equation that contributed more to productivity growth during the 1968-1978 period than it did from 1948 to 1964. This point is amplified when we consider that the cost of the labor for building a new home has decreased from 33 percent of the total cost in 1949 to 17 percent in 1977, and has declined an additional 1 percent from 1977 to 1980 (National Association of Home Builders 1981).

There is mounting evidence from studies by Allen (1979), Brown and Medoff (1978), Clark (1978), Connerton, Freeman, and Medoff (1979), and by Frantz (1976) that unionized workers are more productive than nonunionized workers and that unionization increases productivity in an establishment.

LeMasters (1975) suggests that union establishments offer higher wages and therefore attract better workers. Riemer (1979) credits job security and training opportunities as factors that enable union establishments to attract high quality workers. Bok and Dunlop (1979) more accurately suggest that collective bargaining is the key to maintaining the caliber of workers.

Organized labor's existence is based on its fundamental ability to protect its own members and to advance their socioeconomic needs. Before the establishment of labor unions in America, workers were treated more as beasts of burden than as human beings. While some authors would have us believe that the American labor movement is syndicalist in nature, this is simply not true. Present-day labor unions are content to lobby for higher wages for their members (based on gains in productivity or employer profits), better working conditions, and protection for the majority of their members.

Many of the gains made by organized labor for its own members have benefited all those who work and live in this country. Free public education, Social Security, unemployment insurance, fair labor standards, and legislation dealing with civil rights, safety and health, equal pay, and employee retirement income are but a few of the achievements for which organized labor lobbied and that are now enjoyed by all citizens. Organized labor does not want to transform the economic system, although its quest for social progress has, in the opinion of many, placed a burden on our economic system.

There are many areas in which organized labor may influence the factors of productivity. Labor-management cooperation, wage differentials, innovations, training and retraining programs, motivation, labor education, approval or disapproval of new technologies, and collective use of pension funds are but a few of these ways. However, the amount of influence and contributions greatly depends on each of the 175 national or international unions, their local unions or lodges, and their members. Each national or international union may offer varying approaches that are dictated by their individual structures, goals and objectives, their liberalism or conservatism, political influence, and professionalism.

DeSchweinitz (1949) suggests that the largest union gains leading to increased productivity have emerged out of the crisis for survival. Threats of plant shutdowns, a loss of jobs, wars, and strikes have historically led both labor and management to seek ways to improve production. Although this may sound like a simple process, history reveals that it has been complex, especially in cases where management has asserted its rights and labor has retaliated.

Industrial Productivity

DeSchweinitz's (1949) judgment on productivity is based on the manufacturing industry. In order to make specific statements about productivity in a particular industry, it is essential to understand not only the operation of that particular industry but also the occupational groupings within that industry.

Industries and occupations that utilize large amounts of technology may achieve gains in productivity through the interaction of human skill, machines, and technology. On the one hand, significant advances in productivity are difficult to achieve in industries and occupations that are characterized by a very high degree of personal services. Productivity ratios for these industries and occupations are affected largely by the skills and efforts of individual workers and not by the interaction of human, mechanical, and technological capabilities.

Productivity and Employment

It should be noted that improvements in productivity do not necessarily enhance employment opportunities. Between 1950 and 1969, the manufacturing industry in the United States increased its output by 150 percent and its employment by 33 percent. Since 1969 there has been no increase in employment in the manufacturing industry, yet output has increased by one-third.

Advances in technology not only enhance our life-styles by increasing the amount of leisure time at our disposal, but they can also adversely affect employment rates in a particular industry. As machines become technologically inefficient and require replacement, labor requirements for operating them are correspondingly affected, especially for low-skilled or medium-skilled workers. As the new machines take over more of the work-load, those workers who are not displaced are forced to make the psychological adjustment of getting used to working for a machine. Technological advances also affect productivity indirectly by creating new health hazards, by increasing stress and stress-related illnesses, and by altering workers' attitudes.

For twenty years Jeffrey Riemer (1979) studied the construction industry from within as a craftsperson. He concludes that despite modular construction techniques, advanced building design, and production efficiency measures, segments of the construction industry are experiencing severe production problems as a result of a decline in the quality of individual work. He attributes this decline to craftsworkers being so coerced into meeting production standards that the quality of individual work has begun to lose its importance, and pride in one's work has become meaningless.

Educational Considerations

Riemer's remarks are amplified by Donahue (1979), who states that "technology has meant a misallocation of the work force with resultant morale problems on the job." He cites as a possible cause an "overeducated work force with 36 percent believing that their skills are being underutilized." In 1940 only one worker in twenty-two was a college graduate, but 20 percent of today's workers are college graduates.

Between 1970 and 1976, the proportion of American workers with four or more years of college education increased by more than 60 percent in clerical, sales, service, and blue-collar

occupations—areas that have traditionally employed very few college graduates. Before 1960 many employers of the apprenticeable trades thought they were fortunate to have an average apprentice applicant with ten years of formal education. Today, the national average for apprentices is slightly over fourteen years of formal education.

Over the last twenty years, technological advances have compelled workers to acquire additional skills and often some additional education in technical areas. Yet employers are still looking for the basic skills and educational competencies that indicate that an individual will perform well in the work place. Employers still want to hire people who can demonstrate basic verbal and mathematical skills and who are able to communicate clearly, to reason logically, to read with understanding, and to compute accurately.

A high school diploma by itself does not indicate sufficient technical preparation for most occupations, but neither does an undergraduate degree. Certain professional occupations do require a baccalaureate degree, but these occupations amount to only one in every nineteen jobs. However an applicant for one of the remaining eighteen jobs will need technical training, work experience, or training in a particular skill or group of skills.

The Impact of Technology

There are growing numbers of individuals who feel that by the year 2000 the only entry-level jobs available will be in the service industries, and even those will be at a minimum. This will probably be the case, if we assume that today's employment standards will still be operative by that year. We have already seen many entry-level jobs abolished or reduced in number over the past five years. For example, the Bell System employs 68,500 fewer telephone operators today than it did in 1960. Over the past thirty-five years, employment in our nation's rail systems has declined by 65 percent, and almost all entry-level jobs have become obsolete by virtue of new technology. Computers are now doing the work of well over half a million clerks. Bank tellers are being replaced by machine tellers. Employment of compositors and typesetters, who account for 39 percent of the craftsworkers in the printing industry, is expected to decline by 25 percent by 1985.

In addition to computers, industrial robots have also taken over many jobs. Robots are not only replacing entire assembly lines, but are also being used for die casting, investment casting, forging, injection molding, material and parts handling, warehousing and storage, supply delivery, interoffice delivery, tool handling, mixing liquids and paints, welding, stamping, painting machine operations, and loading and unloading operations.

If we continue to implement devices such as computers, advanced communications devices, digital systems, speech synthesizers, high-definition television, robotics, and optronics, without retraining displaced workers or without giving thought to institutional restructuring, then we invite both white- and blue-collar unemployment. At the same time we create pockets of occupations with skill shortages.

Although many people predict that technological change will have an impact on all occupations, with the greatest impact on white-collar occupations, no one can accurately foresee the total impact on the work place. Nor can anyone say with certainty what types of jobs will be available or what kind of education and/or training these jobs will require.

Because of these uncertainties, organized labor has moved in several directions—at the international, national, and local union levels—to deal with these changes. Labor's responses are described by Murphy (1981), who cites various contract provisions and technological change clauses in collective bargaining agreements. He also divides into four categories:

- The introduction of technological change
- The changing nature of jobs resulting from the new methods or machinery
- The changes in the skills required of workers, and any resulting changes in worker status
- The reduction in the work force, which may be a consequence of technological change

Since 10 percent of all technical knowledge becomes obsolete each year, the effective life span of technical training grows shorter and shorter. This trend must be promptly confronted via better occupational planning, including education, training, and retraining.

Toward a National Policy

If our nation is to reach the point where our productivity keeps pace with technological developments, our educational and training institutions must keep pace with the new technology. Schools must impart the skills that will be an asset to a successful career, beginning at the lowest grade in a disciplined atmosphere. Without a clearly articulated national policy, our schools will continue to lag behind workers' training needs.

We need a national technological policy that addresses the likelihood of a broad range of radical social changes and changes in our work force. This policy should, at the very least, address these issues:

- The effects of technology on our work force
- Ways to avoid or ameliorate the social and economic problems of unemployment
- The most advantageous research directions to pursue
- Statistical projections of new employment opportunities
- Compensation levels for those whose jobs are made obsolete by new technology
- Effective utilization of personnel
- The effects of technology on the education, training, work, and leisure time of the average citizen

In reflecting on the declining rate of productivity growth, Congressman Stanley Lundine (U.S. Congress 1981) believes that four areas must be addressed if productivity is to improve:

- Capital investment
- Research and development

- Regulatory reform
- Human resource development

Of the latter, he says, "Human resource development is the least understood factor affecting productivity performance and in my opinion in the long term, perhaps, the most crucial" (U.S. Congress 1981, p. 4).

Few statistics are available about our human resources on a national level. We do know that we currently have a labor surplus, but with the exception of wartime, the United States has experienced a labor surplus as long as we have been collecting labor statistics.

Reports of skill shortages and projections of demands for skills in the work force are often questionable. For example, Dale Church (1980), former deputy undersecretary of defense for acquisition policy, testified as follows before the House Armed Services Committee:

> Many U.S. machine shops today lack enough skilled machinists and tool and die makers to operate the complex machine tools required to produce much of the hardware that is assembled into our complex (defense) system. Many machine shops could operate two and three shifts a day if skilled labor were available. More than half the skilled tool and die makers in this country will retire within the next eight years. The number of people completing registered apprenticeships in the tool and die making trade is far below the needs of the metalworking industry. The industry is producing only about 25 percent of the skilled journeymen [sic] needed each year to replace those lost through attrition.

On the other hand, Schultz (1980) offers a much different perspective:

> It is possible that despite all the yelling there is no shortage. The majority of companies (85 percent of the companies in the metal trades) that hire machinists (10 percent of the country's machinists) are very small, and small businessmen [sic] are notorious for complaining about shortages of skilled labor. What shop owners are looking for, according to one of them, is a man 28 years old with ten years experience who will work all the overtime he is given but never complain.

There are data to support both the opinion of Church and that of Schultz. If we apply basic economic principles to the discussion, Schultz might appear to be closer to the truth, since we have not seen signs of a wage push for either machinists or for tool and die makers. Nor do we see any attempt by industry to hoard individuals who possess critically needed skills. American companies have made little attempt to prevent these skilled workers from leaving the industry or from being laid off.

Training in Industry

Since similar observations may be made of most industries, we may begin to wonder what our present national inventory of human resources really is. If there are industries that have certain kinds of workers in short supply, we need to find out what the shortages are and how we are preparing to meet them. Industry claims to be spending between $30 and $60 billion annually for training. The Conference Board (Lusterman 1977) states that three out of five companies are

offering in-house training programs to prepare employees for supervisory or managerial responsibilities, and that nearly as many companies are offering courses in technical and functional skills. The Conference Board further reports that 89 percent of the companies surveyed offer tuition-aid programs.

On the other hand, Jensen (1977) reports that 97 percent of the plants surveyed in his study indicated that they had a definite need for training. They reported that 89 percent of their present staff of maintenance craftsworkers needed additional training. Of the new workers entering the maintenance field, 75 percent could demonstrate no training whatsoever. These statistics led to the conclusion that 80 percent of the companies have shortages of personnel trained in maintenance.

Herb Levine states that although a large percentage of American industry offers tuition-aid programs, only 2 to 5 percent of eligible workers actually take advantage of such programs.* Most union members either are unaware of such programs, or assume that the programs are designed for another category of workers because they have been given that impression by the company.

It is worth noting that most of these tuition-aid plans are unilaterally controlled. Because of this, there is little that a union can do for a member who has been denied participation in the program, since the plan is usually not subject to the grievance procedure. Many unions regard these tuition-aid programs as devices that primarily serve the employer as a source of windfall profits, rather than as devices designed to benefit employees and to enhance the company's productivity.

In some cases, the employees who do take advantage of tuition-aid programs are those who want to get out of the plant. These are often technicians who already have an educational background on which to build.

The American Federation of State, County, and Municipal Employees (AFSCME) in New York City has made excellent use of negotiated tuition-aid programs. They have insisted that tuition-aid funds be put at their disposal, and in turn, they have contracted with institutions that are providing upgrading training for their members.

Other industrial unions have begun to give serious consideration to negotiating for tuition-aid funds. The United Auto Workers (UAW), for example, is negotiating for paid educational leave or time off the job for education and training at the employer's expense. New contract settlements, such as the new Ford Motor Company agreement, call for the retraining of those workers whose jobs would be affected by new technology.

Organized labor has had a tradition of concern for in-plant training. Unions feel that a great deal of on-the-job training is training by "osmosis," and the trend today is for unions to attempt to gain more control over this type of training.

In their effort to obtain training for their current and future membership, many unions elected to tap into federal funds when such funds were more available than at present. They obtained funding under the National Defense Act, the Area Redevelopment Act (ARA), the Manpower Development and Training Act (MDTA), the Comprehensive Employment and Training Act (CETA), the Trade Adjustment Assistance Act, or through special grants from one of several

*Quoted in "Retraining: The Need for Flexibility (Workshop)" (Chamot and Baggett 1979).

federal agencies. In the past, these funds served as seed funds for apprenticeship endeavors and for short-duration upgrading programs. Smith (1981) indicates that very little is now being done by the federal government to retrain experienced workers who have been displaced or who anticipate displacement. Smith further states, "It would be more effective in promoting economic growth to retrain these workers or other nondisadvantaged persons than to focus on the disadvantaged."

Under the apprenticeship system unions play a major role in determining the nature and quality of training programs. Unions representing the building trades, the metal trades, and the maritime trades (and also a few industrial unions) have been negotiating apprenticeship training programs since the turn of the century. Both the building trades and the maritime trades have established their training programs through trust funds, which have served as the model for the English grant-levy system and also for similar programs found in South American countries.

There is always a need for education and training programs. One of the most pressing needs is to educate workers to appreciate the need for further education, training, or retraining. Fein (1981) sums up the matter by stating that "the training function is to change attitudes." To accomplish such a change, it is necessary to inspire in workers the desire to change. Workers may have to experience a kind of psychological jolt, or what Massey (1976) terms a "signficant emotional event," in order for the change to occur.

Some individuals' value systems have been molded in such a way that throughout their lives they tend (1) to desire education and training and see them as being good in themselves and (2) to accept change as a part of life. For these workers a "significant emotional event, such as a plant closing, a reduction in force, or a firing, need not occur to prompt the workers to avail themselves of additional education and training.

Although union members have been exposed to all types of education and training programs, most established members (such as journeypersons) prefer short, no-frill courses that are timely and are taught in a familiar environment. Some unions have attempted to use transactional analysis and sensitivity training to develop interpersonal skills, but the most successful programs of this sort have been developed using role-playing techniques. While programmed modular, competency-based education and training methods rank high in both knowledge acquisition and knowledge retention, such techniques have been found to be extremely weak in changing attitudes and developing interpersonal skills.

Unions and employers vary greatly in their approach to the design of vestibule and apprenticeship programs. Some unions have cited excellent results using modular, competency-based techniques; others have had extremely poor and somewhat negative results using such techniques. Chief problem areas have included the failure to develop interpersonal skills, reasoning ability, and problem solving skills.

Unions and employers often disagree on the method of developing programs. Employers prefer narrow, specialized development. Unions, on the other hand, prefer broadly based programs that develop a maximum of transferable skills. Unions also feel that broadly trained members acquire a better base on which to learn to adapt to change, and therefore require less retraining than those who have been subjected to narrow, specialized training.

Two areas that must be given consideration in designing programs are (1) the individual's freedom to make decisions on the job and (2) the effect of such decisions on the welfare and safety of the general public. In the final analysis, program development depends on the ability of individuals to cope by exercising independent judgment in situations that could affect the lives of others or on the operation of highly technical and expensive equipment.

Labor-Vocational Education Cooperation

In the late nineteenth century, organized labor turned to trade schools in Chicago to educate union members in certain vocational skills. In an effort to prevent jobs from going to alien workers, unions found it necessary to tap into the existing system of trade schools that were equipped to impart the up-to-date skills needed by their members. Unfortunately, a very real rivalry has evolved between the vocational education system and the apprenticeship system in our country today. This rivalry is most noticeable in the service and industrial trades, but actually exists in all the trades. It is not a peculiarly American phenomenon, but exists in most Western countries. It is characterized by an inverse relationship between the strength of apprenticeship training and that of vocational education. For example, Austria and Germany have very strong apprenticeship systems and rather weak vocational education programs. France and Sweden, on the other hand, have strong vocational education programs and weak apprenticeship systems. Canada seems to be the rare exception, where both systems coexist in a rather efficient manner. Our efforts in research and development in vocational education should be expanded so that each system can learn what it does best and then develop that.

Certain fundamental questions need to be studied in light of the question of productivity. We need to research how and why people learn, and how that learning can be made more efficient. Students need to be taught from an early age to learn efficiently, to develop self-confidence, and to accept the value systems that will help them be productive as students and later as workers. Competencies should be examined that are being utilized as criteria in today's schools. Are the competencies adequate for the wide range of skills demanded in the work place? Should there be more emphasis on interpersonal skills for dealing with employers and coworkers.

Additional research should be conducted on the ways in which vocational education might be more successful in promoting sex equity. Organized labor has had to examine the issue of sex equity in its own training programs, and has learned that despite efforts to promote affirmative action, many women are currently not interested in pursuing work in certain nontraditional trades. Some women lack the dedication needed to attain the journeyperson level. Perhaps certain biases can be erased with the cooperation of the vocational education system by working with students at a younger age.

Research should also address the particular needs of minority and inner-city youngsters in order to find ways to boost equal access to vocational education institutions. Unless our national employment statistics can be improved by targeting our efforts where they are most needed, our national productivity statistics will not be substantially altered.

In most cases, organized labor is ready and willing to cooperate with vocational educators at the local level. Local unions are very knowledgeable of local labor markets and of the skills and proficiencies that are most in demand. At the local level, union members are able to share their perceptions of what makes skilled workers or skilled craftspersons. To a certain extent, local union officers and members are available to offer students vocational guidance and to participate in career days; some are occasionally available for instructing.

While local cooperation between vocational education and organized labor should definitely be encouraged, the changes effected at the local level will not necessarily have an immediate impact on national statistics. Productivity is a matter of complex interrelationships among many variables, and changes must be broadly based within American society.

Conclusions

Obviously, the question of how to boost our lagging national productivity is too broad to answer in one paper. Our productivity problem can be treated strictly as an economic issue, as a sociological phenomenon, as a symptom of a psychological orientation toward work, or as an effect of technological advancement. It can be viewed as a variable in determining capital investment. The decline in productivity can even be regarded as a fictitious national malaise, a disease that does not really infect the American economy, although some writers would diagnose us as having anyway.

Certainly we could all produce more. But do we want to generate work for work's sake? Do we want to produce more goods if there is no increase in demand for those goods? Do we want to produce more goods without simultaneously making a dedicated effort to maintain or improve the quality of the product? Will we, as employees, make an honest effort to become more productive when we know in advance that we will not be directly rewarded for our efforts?

Most Americans relate to the productivity "problem" ultimately in terms of their own jobs or life circumstances. To have jobs, to be dedicated to performing well in our jobs, and to pursue life, liberty, and happiness despite the fluctuations of the consumer price index—these are all basic goals that are generally shared by our citizens. Industry, labor, and education are all intrinsically connected to the way in which we can pursue these goals. With a clearly articulated national policy that takes into account technological changes, the institutions of industry, labor, and education should be better able to meet the complex problems that appear to threaten the productivity of our system.

Americans have always enjoyed a challenge. In the face of the rapidly changing society of the 1980s, we can hope that our national ingenuity will continue to be one of our most precious natural resources.

QUESTIONS AND ANSWERS

Kenneth R. Edwards

Question: What is organized labor doing to create new jobs, and is training involved in labor's efforts to create new jobs?

Unless there is a clear definition of what a "new job" is, this becomes a difficult question to answer. For example, the Bureau of Labor Statistics will tell you that in May 1982 the number of people employed jumped by 780,000. However, since many of these jobs were either replacement, part-time, or seasonal positions, would you say that 780,000 "new jobs" were created? Besides, with 10 million Americans out of work and 1 million people entering the labor force in April of 1981, 780,000 placements mostly go unnoticed. Also unnoticed are the many employees in the auto, steel, and trucking industries who are currently working because of wage rollbacks and the granting of other concessions that have been worked out through the cooperative efforts of labor and management.

As previously mentioned, organized labor, per se, is approaching the current economic situation from several directions. The UAW, in rolling back wages, has insisted on retraining. Together with management, they have added a year to some of their apprenticeship endeavors to address the new high-technology areas. AFSCME has established upgrading and basic education programs in the health and allied medical fields. The Machinists Union has revitalized its apprenticeship endeavors. The Screen Actors Guild, Textile Workers, and Communication Workers, to mention a few, have already established or are currently putting into effect apprenticeship and training programs. Many of these groups have never previously been involved in this type of endeavor.

Several unions are currently working with their employers to update and modernize the training their members receive. Many of these unions are in depressed industries such as mining, steel, and the manufacturing of rubber products. Unions belonging to the Building Trades are in the process of pooling their pension funds in an attempt to stimulate the construction industry. This will not only allow unemployed members to become employed again, but it will also begin to generate revenues for training trust funds that are currently becoming exhausted.

Even though numerous federally-assisted programs have been drastically cut or phased out, segments of organized labor are still involved in outreach, pre-employment training, job search assistance, training within correctional institutions, Job Corps, and other community development programs.

Question: In the training programs you administer, what are you doing to remove bottlenecks between unskilled, unemployed workers and the skills now demanded?

First, I do not administer any training programs. The vast majority of the programs that are available for our members are administered at the local level. I serve only as an advisor, exchange agent, curriculum specialist, guidance consultant, and reviewer and critic of technical manuscripts and other training media designed for use in the electrical and electronics industries. In addition, I handle policy matters as they relate to apprenticeship, training, vocational and career education, and psychological testing.

Second, to be a member of most labor organizations, you must be employed in the trade or trades that the labor organization represents. This would be an indication that you have some sort of employment skills. Therefore, unions do not have the same type of bottlenecks organizations have that deal with the chronically unemployed. However, we do encourage our local unions to assist others who work in this field.

On the national level, we have taken special interest in youth activities, vocational student organizations, and the employment of the handicapped. We aiso work with several segments of the electrical and electronics industries in developing standards for training, as well as cooperation in other joint endeavors.

Third, our greatest bottlenecks stem from economic conditions; namely, tight money and high interest rates over which we have little control.

One of our country's basic industries is the construction industry. My union depends on it to furnish funds for our training trusts in our industry as well as our training positions. Of course, tight money means tight budgets; and one of the first cutbacks that industry makes is in the field of training. If the economic climate is favorable, then we find industry favorable to training and retraining.

Our second largest problem is plant closings. Members who have not been previously subject to unemployment often become confused and do not really know what marketable skills they do have, or how their skills might be used for some other employment. This problem is further compounded when there are no jobs available in the community, or if the community is aligned to a single business or industry that cannot continue to support it.

There is a growing view that hourly workers in this country are not mobile and that American firms have not significantly mobilized their work force. The truth of the matter is that American firms are more mobile than the work force, and through relocation, companies often leave the workers and the community stranded.

In those cases where facilities are available and workers can be employed if retraining is available, my union strongly encourages such retraining procedures.

Question: Would you expand your comments on the nature of the relationship between vocational education and apprenticeship in Canada. What's good about it? Why is it well balanced? What changes should we make in this country to achieve a better relationship between apprenticeship and vocational education?

First, several provinces of Canada use a three-tier system: pre-employment training, apprenticeship training, and journeyperson upgrading, with standards developed for each segment.

Second, in Canada there is more government control, which promotes uniformity. There is also more program monitoring.

Third, individuals tend to be trained more for the industry as a whole than for a specific occupation in a segmented part of an industry.

Fourth, the Canadian training is often broader and has more depth than that found in many of our American apprenticeship programs, especially in the industrial and service industries.

Fifth, several Canadian provinces have Tradesman Acts. These Acts not only establish performance standards but also force the workers to keep both skills and trade knowledge up to date.

Sixth, when apprentices attend classes for three months and work nine months, related instruction can be better aligned to climatic and employment conditions. However, training and living stipends for attending related instruction classes often create a hardship for an indivdual, especially if that individual has family responsibilities.

Seventh, there is a tendency for better job matching between employment needs and those who are being trained.

Regardless of what individuals think, I believe there is a better relationship in this country between apprenticeship and vocational education at the local level than most people would like to admit. However, there is a great need for more trust and communication between the two systems. There is also a need for a better fundamental understanding of how both systems work. The main drawback is that apprenticeship is an industrial endeavor, whereas vocational education is strictly an educational endeavor. As vocational education develops more performance-based standards, I feel that the two systems will be knit together more closely. Effective mutual communication is probably the single most important ingredient that could be improved.

Question: The Japanese have often been cited for their superiority in what some call "adaptive technology," where they exploit the basic research of other countries or nations. As you view our situation, do you see any particular rule that labor unions or vocational education could play in improving our mastery of adaptive technology?

A series of fundamental questions must be answered in discussing either Japanese or German adaptive technology. The first question is whether we want to be branded as copycats or whether our individual pride places us above that? The second question deals with how much we are willing to change our life-styles and impose upon or limit our individual freedoms.

Critics are fast to tell us that the Japanese are the third largest producers in the world, yet they have one-twenty-fifth of our population and must import most of their raw materials and energy. They also tell us that the Japanese workers are less alienated and happier in their jobs. Not only do the Japanese achieve more because of this happiness, but they have the lowest employee turnover rate of any nation in the industrial world. While this may be true on the face of it, it is only true to a degree.

The basic culture of Japan emphasizes dominant obligations imposed from above. Compared to the United States, one finds little freedom of occupation choice. Japanese children are trained for jobs from very early ages. Their economy is hierarchical in an idiosyncratic way. There is no "bail-out" if a company fails. The Japanese national strategy is to aim for market share, rather than immediate profits.

In Japan, manufacturing is actually the assembling of parts made by subcontractors, who must not only be satisfied with the price that the big companies are willing to pay but must stock inventories for those companies. People who work for the suppliers are not offered "lifetime" commitments and are laid off when business is slack, are fired when technological improvements are made, and are generally treated as second-class citizens. Even those who are supposed to have "lifetime" commitments find that by the time they reach their middle to late fifties, the commitment has run its course and old age must be faced without a pension.

If we give credit to the Japanese for anything, it should be for the basic way in which they adhere to the fundamentals of commerce, and for their vigorous adoption of American war production and brainstorming techniques.

If we look at the German situation, we again find lesser freedom of choice. Industries are taxed for not training, there are lower turnover rates, and less concern for social goals. However, you will find a greater concern for the quality of individual work and a tendency for workers to use more of their income for personal savings (28 to 30 percent of the average German income as compared to our 2 percent). The Germans have done an excellent job in adapting our GI bill for the training of their citizens.

In both Japan and Germany, industries have addressed adaptive technology by organizing their approach from the top down. They have keyed investments to long-term, well-planned cycles. However, in each country, workers have given away some of their personal freedom.

To sell technology without having customers to buy that technology would be like trying to lead a horse to water but being unable to make it drink. It should be remembered that during the 1950s, we manufactured several small, fuel-efficient cars, but the companies that manufactured them did not survive. If these companies could have survived the 1960s, they would have been the heroes of the 1970s. For the past several years, I have heard individuals say that business, including both labor and management, should get its act together. Isn't it time for the consumers to get their acts together, too? Perhaps a by-product of vocational education will be more intelligent consumers.

REFERENCES

Allen, Stephen. *Unionized Construction Workers Are More Productive*. Washington, D.C.: Center to Protect Workers' Rights, 1979.

Bok, Derek C., and Dunlop, John T. *Labor and the American Community*. New York: Simon and Schuster, 1970.

Brown, C , and Medoff, J. "Trade Unions in the Production Process." *Journal of Political Economy* (January 1978):355-378.

Chamot, Dennis, and Baggett, Joan N., eds. "Retraining: The Need for Flexibility (Workshop)." *Silicon, Satellites and Robots: The Impact of Technological Change on the Workplace*. Washington, D.C.: Department of Professional Employees, AFL-CIO, 1979.

Church, Dale W. Statement before the House Armed Services Committee on the Subject of Industrial Responsiveness. Typewritten. 25 September 1980.

Clark, K. "Unions and Productivity in the Cement Industry." Ph.D dissertation, Harvard University, 1978.

Connerton, M.; Freeman, R.; and Medoff, J. "Productivity and Industrial Relations: The Case of U.S. Bituminous Coal." Working paper. Washington, D.C.: National Bureau of Economic Research, December 1979.

DeSchweinitz, D. *Labor and Management in a Common Enterprise*. Cambridge: Harvard University Press, 1949.

Donahue, Thomas R. "The Challenges of Technology." *Silicon, Satellites and Robots: The Impact of Technological Change on the Workplace*, edited by Dennis Chamot and Joan M. Baggett. Washington, D.C.: Department for Professional Employees, AFL-CIO, 1979.

Fein, Mitchell, et al. "What Can You Really Do about Productivity?" *Training* (March 1981):22-31.

Frantz, J. "The Impact of Trade Unions on Productivity in the Wood Household Furniture Industry." Senior thesis, Harvard University, 1976.

Froehlich, Leopold. "Robots to the Rescue?" *Datamation* (January 1981):84-96.

Jensen, Ralph. "Maintenance Training." Speech delivered at State of Ohio Apprenticeship Conference, Columbus, Ohio, September 1977.

LeMasters, E. E. *Blue Collar Aristocrats*. Madison: University of Wisconsin Press, 1975.

Lusterman, Seymour. *Education in Industry*. New York: The Conference Board's Public Affairs Research Division, 1977.

Marshall, Ray. "Productivity, Industrial Relations, and Management Systems." Lyndon B. Johnson School of Public Affairs, University of Texas, Austin, 1982. (Typewritten.)

Massey, Thomas. "What You Are Is What You Were When." Film by Magnetic Video Corporation, 1976.

Murphy, Kevin. "Technological Change Clauses in Collective Bargaining Agreements." Washington, D.C.: Department for Professional Employees, AFL-CIO, 1981.

National Association of Home Builders. "Breakdown of Costs for a New Home." In 1981 *Fact Sheet*, Washington, D.C.: National Association of Home Builders, 1981.

"Retraining: The Need for Flexibility (Workshop)." *Silicon, Satellites and Robots: The Impact of Technological Change on the Workplace*, edited by Dennis Chamot and Joan M. Baggett. Washington, D.C.: Department for Professional Employees, AFL-CIO, 1979.

Riemer, Jeffrey W. *Hard Hats: The Work World of Construction Workers*. Sage Publications, 1979.

Schultz, William H. "The Machinist Shortage." Paper produced for a Ford Foundation research project directed by Robert Schrank. Typewritten. Boston, Massachusetts: October 1980.

Smith, Ralph. *The National Interest in Employment and Training*. Washington, D.C.: National Commission on Employment Policy, May 1981.

U.S. Congress, House Subcommittee on Science, Research, and Technology. "The Human Factor in Innovation and Productivity." *Hearings before the Subcommittee on Science, Research, and Technology of the Committee on Science and Technology*. 97th Congress, 1st Session, September 1981. Washington, D.C.: Government Printing Office, 1981.

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